AMS-02 Stress and Fracture Analysis Report

Items in RED are not yet in the Stress and Fracture Section of the AMS CDR DATA PACK

1.1.5.12. Lower Interface plate to Vacuum case bolts Fail-safe (Shear pin failed)
1.1.5.13. Clevis Plate Vacuum Case Assembly

1.2 USS-02

1.2.1 Upper USS

1.2.1.1 Sill Bracket
1.2.1.2 Diagonal Sill Bracket
1.2.1.3 Sill Trunnion
1.2.1.4 Friction stir weld tubes
1.2.1.5 Sill Elbow Joint
1.2.1.6 Upper trunnion bridge to upper VC joint rivets
1.2.1.7 Upper trunnion bridge to sill joint rivets
1.2.1.8 Sill joint to elbow rivets
1.2.1.9 Lower trunnion bridge to elbow rivets
1.2.1.10 Sill bracket to sill tube rivets
1.2.1.11 Diagonal Sill bracket to sill tube rivets
1.2.1.12 USS Tube Buckling
1.2.1.13 Sill Joint

1.2.2 Lower USS

1.2.2.1 Lower USS to Upper USS bolts fail-safe analysis (one bolt failed)
1.2.2.2 Lower USS to Upper USS bolts
1.2.2.3 Lower USS to Upper USS bolts fail-safe analysis (Shear pin failed)
1.2.2.4 Lower angle beam flange bolts
1.2.2.5 Lower Vacuum case joint
1.2.2.6 Lower Center Body joint
1.2.2.7 Lower Trunnion bridge to lower VC joint rivets

1.2.3 Keel

1.2.3.1 Keel Block
1.2.3.2 Keel Trunnion
1.2.3.3 Keel Angle joint to Lower Center body bolts

1.2.4 Miscellaneous (FRGF, PVGF, ROEU, Rectifier Mounting bracket etc.)

1.3 PAS assembly

1.4 Helium Tank

1.5 Magnet Straps static analysis

2.0 Fracture Analysis

2.1 Vacuum Case

2.1.1 Conical flange
2.1.2 Inner cylinder
2.1.3 Support Rings

2.2 USS-02

2.2.1 Friction stir welded tubes

2.2.2 PAS

3.0 Experiment components

- 3.1 Cryo Magnet
- 3.2 TRD
- 3.3 Tracker
- 3.4 Anti Coincidence Counter (same as AMS-01)
- 3.5 Upper TOF
- 3.6 Lower TOF
- 3.7 RICH
- 3.8 ECAL
- 3.9 Zenith Radiator
- 3.10 Wake and Ram Radiators including crates
- 3.12 Tracker Thermal Control System
- 3.13 TRD Gas system

Appendices for each section will be at the end of that section.
Magnet strap dynamics analysis and the Coupled Loads Analysis will be in separate sections

"AMS-02 Cryogenic Magnet Suspension Straps Stress Analysis of Clevis and Pins" is available by special request only